

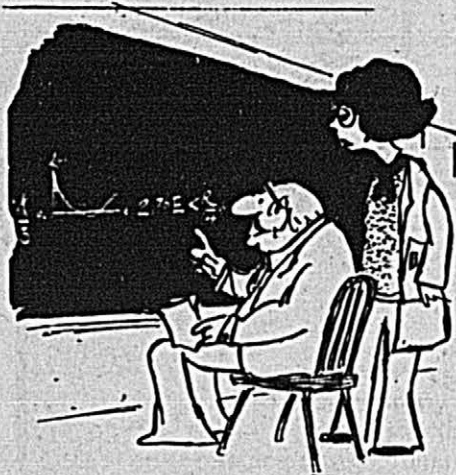
## Putting salt on the shelf

by Annette Walker

Dr. Rose Johnstone holds the distinction of being not only a respected professor, active in research at McGill, but also of being chairperson of the biochemistry department.

Although of European origin, her home as a child was Montréal. A strong motivation to be financially independent was her major career inspiration she admits, and landed her in McGill's biochemistry department as an undergraduate before the time most women freely dove into the pure sciences for a career. Due to financial restraints she remained at home to complete her PhD at McGill. In June 1980, Johnstone was awarded the position of chairperson of the biochemistry department after many years of dedicated research and teaching.

As chairperson, Johnstone sees that her major responsibilities are "to make sure the scientific life and the teaching of the department are well done, that you hire the right people, and that you make sure the intellectual work of the department gets done."



The beauty of this is that is only of theoretical importance, and there is no way it can be of any practical use whatsoever.

The ongoing research in Johnstone's laboratory is concerned with transportation of amino acids through plasma membranes. Cells have the ability to selectively pump molecules such as amino acids from outside of the cell through the plasma membrane, which acts as a barrier, to the inside of the cell. Effort is currently being directed towards purifying the protein.

An outgrowth of this research led to the study of the uptake of proteins by maturing reticulocytes. A reticulocyte is the last stage in cellular development before becoming a mature red blood cell. Hemoglobin is a protein produced in reticulocytes but not in red blood cells. To obtain the iron necessary for hemoglobin formation, a protein on the surface of the reticulocyte binds another protein in the serum called transferrin which carries the iron.

However, when the cell matures it no longer needs to take up iron, and consequently 'spits' out the surface protein. The question remaining is how does the cell know when to release the surface protein which binds the iron containing

protein, and how does it avoid releasing the wrong surface receptor protein, since there are hundreds of different receptors on the surface of the cell.

Johnstone was drawn into biochemistry because she enjoys working in a lab. Today, however, duties as a professor and chairperson take up much of her time so while she works in the lab when she can, most experiments are actually performed by her "superb technician".

Although a couple of graduate students may work on one of her projects, Johnstone prefers them to work independently. "The graduate students try to do their own thinking because that's the pleasure of doing research — to think something out and decide what you want to do and see if it will work."

Financing is a problem confronting any form of research. At the moment, according to Johnstone, there are relatively few problems with funding for research in the biochemistry department. As with most universities, McGill is not the main provider of money for research; it comes from outside agencies. "I don't get a nickel in terms of research money from McGill. I get light and I get heat and I get a room, but if I want to put a bottle of salt on the shelf I have to buy it with what I've brought in."

Research money may be obtained through entering competitions promoted by various health agencies or the government. However, if these agencies don't like a particular area of research, and don't consider it worthwhile, it will be hard to obtain funding. "When people see something that's exciting and potentially very important to the human condition, then it's much easier to get that kind of research funded than something else."

Fortunately, funds are not allocated only for currently 'exciting' research. "Mostly for the government agencies, at any rate, the emphasis is on doing solid, rigorous research even though it doesn't have any immediate value. You're trying to foster the development of the research attitude, and provision of new information... you can never tell which issue is going to become important."

The position of professor in a university department not only holds a great deal of prestige and respect, but of all the professions and occupations it is reputed to have the greatest job satisfaction and fulfillment. There is a great deal of freedom, more so than in a research position for the government or private industry.

"That's one of the virtues of a university. For the most part, every staff person who undertakes a research project is perfectly at liberty to do whatever thing he's interested in. That is the essence of academic freedom and it's guarded very jealously. But you have to find the resources to do it with. You have to convince someone who's going to pay the money to run the lab, to put the salt on the shelf and to buy the cen-



trifuges and whatever."

However, along with the responsibility of being "a creator of new information" and the "obligation to expand the walls of knowledge", comes the duty of being a teacher. Professors are human too, and Johnstone admits that she does get nervous presenting a lecture sometimes. There is also a great deal of work which goes into presenting a lecture, something students don't always realize.

"You have to prepare the material, research it, construct it, then you have to deliver it, and you must remember your lines when you deliver it. It's not very easy, but on the other hand it's quite pleasant. Even on an old lecture I will spend several hours the night before going over it... and a new lecture, when you don't know the material, takes a minimum of 15 hours hard work just to get the material together, then you've got to construct it and decide how to build it up and make a story out of it."

Consequently, a staff position in a university does not entail a 9 to 5 job. Johnstone says that she and her colleagues often work in the evenings either reading, writing or preparing lectures. "You're always behind in your readings in the field. Most of my col-

leagues are going to do something in the evening that has to do with their classwork — there is no other way they can survive."

Johnstone also sees the workload of a student here at McGill as very heavy compared to most undergraduate schools. "The students, especially in specialized programs, probably work much harder than in other Canadian and American universities. That is my feeling, and I can say that after seeing the programs at other schools, and seeing, for instance, what we expect our biochemistry students to know compared to what the biochemistry programs are in other schools across the country. We just did a survey asking how many courses do you teach, what do you teach, and what level, so we've made comparisons on that score. Now, it's very hard to do these comparisons on paper, but I have the impression that our students work very hard. I can't speak for the whole university... but I think the material that the students are presented with is fairly demanding for that level in most areas."

Clearly, the success of McGill biochemistry students is in large part due to the hard work, patience and concern of professors such as Rose Johnstone.



"The grant came through. Now we can purchase all the guinea pigs we need, provided our work can be applied to the guidance systems of ballistic missiles."



McGILL  
**ARTS & SCIENCE**  
UNDERGRADUATE SOCIETY

## ELECTIONS LOCATION OF POLLS

To be held Wednesday, March 21, 1984  
10:00 am - 4:00 pm

Arts Building  
Bronfman Building  
Burnside Hall  
Leacock Building  
Otto Maass Building  
Stewart Biology Building  
Union Building

Under no circumstances will any student be allowed to vote without a valid McGill I.D.

**Alan P. Rossy**  
Chief Returning Officer

**Daily Staff Meeting** — Riveting excitement and ribald entertainment — Friday, 15h. BoD and P&P elections, handbook and X issue...If you have nominations or questions for P&P or handbook candidates submit them to Molra, Suzy or Melinda.

Different Interpretations  
in Judaism

### A Panel Discussion

How do the Chasid, Orthodox, Conservative, Reform and Reconstructionist movements differ in their approach to modern day issues.

Rabbis from different denominations will present their views on specific issues.

Date: Wed, March 21/84  
Time: 7:30 P.M.  
Place: 3460 Stanley Street

McGill Hillel  
INFO: 845-9171



## McGill Outing Club



Last General Meeting of the year.

- Last day to order your M.O.C. T-shirt
- Bring cash (\$8.00)
- Election Day
- Sign up for winter camping to Mt. Mansfield

## TODAYS

Sharpeville Armband Day Wear an armband to commemorate the Sharpeville Massacre, March 21, 1960.

McGill Film Society presents *The Children's Hour* in FDAA at 20h.

"Forbidden History of El Salvador" — film and lecture by Juan Antonio Osegheda. 107 Union Bldg. at 19h.

"News from Central America" — lunchtime talk with Fr. Ernie Schibli from the Social Justice Committee. 12h noon at Newman Centre, 3484 Peel, 392-6711.

Women's Union — General Meeting at 17h. Confusion time is running out — elections/centennial — we need you.

Sexual Harassment Meeting — with Kay Sibbald, Dean of Students speaking. Room 423 of Union Bldg.

Gays and Lesbians of McGill — Discussion topic: *Closeted and living at home*. 16h in Room 417 of Union Bldg. All welcome. History and Theology of Women in the Church — study group for women but open to all. 16h at Newman Centre, 3484 Peel, 392-5890.

Players' Theatre presents *Who's Afraid of Virginia Woolf* at 20h. 392-8989 for reservations

McGill Drama Program presents *Lu Ann Hampton Lavery Oberlander* by Preston Jones. March 21-24 at 20h. Tickets \$5 and \$6 - group rate \$3.50 for 10 or more. Moyse Hall. Reservations 392-4695.

AIESEC McGill: *The Japanese Approach to Industrial Relations in Canada*. Leacock 232 at 12h.

Amnesty International last general meeting at 16h in Union 425. Elections will be held for next year's executive.

Chaplaincy Sister Anne's Prayer Group at 19h30 in Green Room of the Newman Centre. Christian Meditation at 12h, Green Room, Newman Centre.

## STUDENTS' SOCIETY APPLICATIONS ARE HEREBY REOPENED FOR THE FOLLOWING POSITIONS:

(Deadline: 4:30 p.m., Tuesday, March 27th, 1984)

### CHIEF RETURNING OFFICER

The Chief Returning Officer (CRO) of the Students' Society will organize and supervise Students' Society elections, by-elections and referenda during the 1984/85 school year. He or she will appoint a Deputy CRO through the normal application process as well as district returning officers (DRO's) to supervise each poll. Like the DRO's, the CRO will be paid basic minimum wage only on election days for campus-wide elections. Only individual applications will be accepted.

### JUDICIAL BOARD — FIVE MEMBERS

The Judicial Board of the Students' Society acts as the final authority on the interpretation of the Constitution and By-Laws as well as acts of Students' Council and any student group recognized by Council. These five positions are open to law students who, during the 1984/85 academic year will be in third or fourth year or pursuing a graduate degree. Application forms will be available in the SAO and LSA offices. Only individual applications will be accepted for each position.

### PROGRAM BOARD — CHAIRMAN

The Students' Society and Student Services have jointly centralized the major entertainment-oriented committees at McGill under one committee. This includes Welcome Week, Activities Night, General Programs, the Speakers' Program and Winter Carnival. The Chairman of the committee will have general responsibility for the planning and carrying out of all the above-named activities. He or she will also be involved in the selection of students to fill the following additional positions on the board: Secretary, Treasurer, Vice-Chairman (Publicity), Vice-Chairman (General Programs), Vice-Chairman (Volunteers), Activities Night Co-ordinator, Welcome Week Co-ordinator and Winter Carnival Co-ordinator. Applications for these positions will be called for in the near future. Only individual applications will be accepted for the position of Chairman.

### STUDENT DIRECTORY — EDITOR-IN-CHIEF

The Students' Society will be publishing a Student Directory in the fall of 1984. The Editor will oversee all aspects of the publication in-

cluding the organization of authorization release cards to be signed during the September registration period, establishing a budget and calling for printed quotes from various publishing companies. He or she will also decide on other relevant information to be included in the directory. The Editor must be in the Montreal area over the summer.

### STUDENT HANDBOOK — EDITOR-IN-CHIEF

The Student Handbook will be given to every student at McGill during registration in September 1984. This book will include introductory material about McGill, Montreal, the Students' Society and other campus groups with particular attention paid to helping new students orient themselves to McGill and Montreal. The Editor must be in the Montreal area over the summer.

### NOTE:

All of the above positions are considered voluntary and are responsible to Students' Council. In the past, some of these positions have received honoraria. However, the exact amounts must first be approved by Students' Council. Except as noted above, joint applications will be accepted from not more than two (2) students for any one (1) position. All applications will be treated confidentially and will be reviewed by the Students' Society Nominating Committee. The best qualified candidates will likely be interviewed by the Committee.

"General Application" forms are available at the Students' Society General Office, Union 105, 3480 McTavish Street; at Sadie's II in the McConnell Engineering Building and in Chancellor Day Hall at the SAO and LSA offices.

Completed applications must be submitted to Leslie Copeland, Operations Secretary, Students' Society General Office, NO LATER THAN 4:30 P.M., TUESDAY, MARCH 27th, 1984.

**Lisette Noodelman**  
Chairman  
Nominating Committee



## CLASSIFIEDS

Ads may be placed through the Daily, Room 803, Student Union Building, 8 a.m. to 2 p.m. Deadline is 2:00 p.m. two weekdays prior to publication.

McGill students: \$250 per day; for 3 consecutive days, \$2.00 per day; more than 3 days, \$1.75 per day. McGill faculty and staff: \$3.50 per day. All others: \$4.00 per day. *Exact change only, please.*

The Daily assumes no financial responsibility for errors, or damage due to errors. Ad will re-appear free of charge upon request if information is incorrect due to our error. The Daily reserves the right not to print a classified ad.

### 341 — APTS., ROOMS, HOUSING

Fabulous 5-1/2 to sublet from May 1st to Aug. 31st. All utilities incl., completely furnished. 30 seconds from campus. 286-1674 after 3 pm. \$400.00 per month.

Sublet: Clean 4-1/2, safe area, near Guy Metro, furnished, spacious, large kitchen, \$400.00/mo. Available May 1 — Sept 1 call evenings 932-7914.

A large clean 5-1/2 to sublet from May 1st. Durocher near Pine. We'll take the best offer we get. Call 286-0763.

Apt. to sublet April 1st, option to renew. Cozy 3-1/2, fully equipped. Close to campus (Peel St.), reasonable rent. Call 849-2873 or 844-1824.

Apartment to sublet: May 1 — August 30. Clean, quiet and sunny 4-1/2, 3547 Durocher (near Pine). Please call Mike or Pat at 286-0503.

Huge House. To sublet for the summer. Six bedrooms, four bathrooms, living room, etc. In ghetto, near McGill, \$600.00 Call 286-0095.

Apt. to share, 6-1/2, furnished, plus washer & dryer, near campus, all included, 190.00, month. Available from April 1st to Sept. 1st. Call: 932-1436.

Apartment to share, large fully furnished and completely equipped 4-1/2 has extra bedroom. Across from Currie Gym 5 min. from McGill campus. Mat 1st to Aug 31st. Call 844-5024. \$190 per month.

BIG, COMFORTABLE 4-1/2 sublet May-August, option to renew, 5 minutes from campus. Furnished or un-, \$360. Call 286-0600.

I am looking for an apartment to rent for approximately \$150. I am willing to share with someone else. Phone Brendan at 272-7467 after 6pm.

TO SUBLET: May 1 — July 31. Spacious, attractive, furnished 7-1/2 apt. 3 bedrooms in McGill ghetto, Pine Ave. corner Durocher. Possibility to renew. Rent negotiable. Call 286-0203.

Large, bright 1-1/2 to sublet. Available May 1. Aylmer St., minutes from campus. Sunny balcony. \$200 per month. Lease renewable in Sept. 842-3078.

On campus, fully furnished, sunny, large 3-1/2 to sublet May 5 to Sept. 5. Quiet and convenient. Rent /345, including all utilities. Call 843-7124.

1-1/2, large, cozy, Sherbrooke and Guy St. Must sublet, May 1st to Aug. 31st. Only \$175. Call 935-6473.

Roommate needed (pref. female) May 1st for big, bright 4-1/2. Fully-furnished, close to campus (Mountain St.), utilities incl. Ph. 288-0788 (eves)

SUBLET: Clean 1-1/2 on Prince Arthur, 5 minutes from campus. Available May 1 — August 31. \$210/month. Phone 989-1984.

Sublet share of huge, sunny 7-1/2 apartment May through August with option to renew. Large bedroom. Two balconies with great view. \$133. 286-8263.

Sublet, spacious 4-1/2, May 1st — Aug. 31st/84. Great location. Sherbrooke near Atwater. Bus no 144, 24, 138 and Atwater metro. Alexis Nihon Plaza nearby. 935-3482.

To sublet: sunny, spacious 5-1/2 (or by room) facing St. Louis Square. 2 balconies. May and June \$550. Call 286-0843. A must See!

Large, newly-renovated 7-1/2 — 3 bedrooms, 1-1/2 bathrooms, enormous central living-space with the option of a fourth bedroom. Available May 1, \$600/month, call 932-7520.

Downtown, pleasant quiet room, own bath and entrance to rent for 4 months or shorter. \$200/month, facilities included. 935-2312.

Gorgeous, spacious room to sublet May 1st

to August 31st in large, clean 5-1/2 — 10 min. walk from campus. Furnished or unfurnished. \$170.00. Call evenings. 286-0268 — ask for Sarah.

To sublet May 1 thru Aug 15 — spacious 2-1/2, clean, furnished, convenient (on Peel St.) — \$250 per month — call 286-0789, evenings.

You must see this! Bright, spacious 4-1/2 sublet May 1 to Sept 1. Excellent location, laundry facilities, furnished or unfurnished, \$400/month. 286-0701.

1-1/2 to sublet from May to August. Option to renew. \$225 per month everything included. On Lincoln 15 minutes walk to campus. Call days 989-9379.

SUBLET 4-1/2 Durocher, large, bright and clean. Oak floors, high ceilings. Available May 1, w/option \$359. 286-0383.

SUBLET: 4-1/2; May 1-August 31; clean, big bedrooms, big kitchen, furnished, close to gym; \$325/mo.; 845-4809.

Sublet, large, warm 1-1/2 room apartment located on Durocher near Pine. Lease until end of August, option to renew. \$265/month. Call 286-9841 any time.

Sublet, May 1-Aug 31. Clean new 3-1/2 A.C., carpet, security, doorman, corner Parc (Lacite), option to renew. Call 286-0098 Bo or Meredith. Utilities incl. \$400.

LARGE 5-1/2 to sublet May 1-Aug 31. \$490 per month. 5 minutes from campus. Located near the gym. Call 286-0539 anytime (best around 7:00 PM.)

Large, sunny 4-1/2 sublet May 1-Aug 31 (Lorne Ave). Unique split level includes washer/dryer, hydro, parking porch & balcony. Great for hot summer nights. Furnished. Call Mark 286-0381.

Modern, clean, sunny 3-1/2 in La Cité to sublet, May 1 to Sept. 1. Air conditioning, cable T.V., all utilities. Best offer taken. Call 286-1078.

Must see: spacious 5-1/2, minutes from campus near gym. Sublet from May 1st — Aug 31st, option to renew. Furnished or unfurnished, rent negotiable. Call 843-5032.

7-1/2 to sublet with option to renew. Clean, spacious, perfect location across from gym. \$630: 157.50/person. Call 286-0107. 456 Pine W.

Starts Mid-April or later; sublet can renew, large livingroom, bay windows, wood floor, beam ceiling, right near Currie Gym/pool and park. 4-1/2; Nancy — 286-0122.

Sublet: bright 3-1/2 on Durocher, near Gym, carpeted, elevator, spacious, furnished or non-furnished. Option to renew, May 1st. Call evenings, 286-1568.

2 minutes, sublet 4-1/2 Durocher/utilities paid, air conditioning, partly furnished, pool, sauna, sunny, great view! \$340 (neg.) May 1st-Aug 31st. Pierre 845-8311 Bryan 843-3757.

To sublet: sunny 1-1/2 in highrise with pool, sauna, and sundeck, from May 1st to August 31st. Fully furnished, 6 minutes from campus and \$285/month. Call 286-0988, evenings.

### 343 — MOVERS

All local moves done quickly and carefully by student with large closed truck. Fully equipped, reasonable rates. Available weekends. Call Stéphane, 737-7540.

### 350 — JOBS

MEDIA OPPORTUNITY: English Montreal Radio station looking for junior copywriter with above average creative and interpersonal skills. Please send C.V. and sample copy to CP 320, Station "H" Montreal, Quebec, H3E 2K8. Attention: M. Campbell. Bilingual subjects (equally proficient in french & english) needed. \$12 for 2 one-hour sessions. Louise CHARTRAND 392-4686.

PART-TIME MARKETING REP NEEDED by dynamic young language training company. Mature, self-starting individual with some experience in marketing or telephone sales. Working from your home telephoning contacts following initial letters to clients. Training and backup provided. Commission to start with early possibility of monthly salary once ability demonstrated. Fluent French essential. Professional Language Services: 287-1822.

### 352 — HELP WANTED

SUMMER CAMP JOBS: Now hiring head of gymnastics, computers, archery, arts & crafts, canoe, guitar, pottery. Call Ron,

Pripstein's Camp, 481-1875.

Starter with knowledge of golf wanted by private club near Mirabel. Salary/hours to be discussed. Mr. Seltzer 324-3300 or Mr. Dunkelman 849-9454 daytime.

### 354 — TYPING SERVICES

Term papers, theses, reports, etc. in English, French, Spanish — professional typist, editor, translator — only 2 blocks from campus — 849-9708 before 9 PM try weekends too.

Fast, accurate. \$1.50/page IBM Selectric with either gothic or courier typefaces. Reduced rates for 30 pages or more. 845-0004.

Have your thesis or term paper professionally typed in a neat academic style with no mistakes. For absolutely the fastest service, call 284-2647 right away.

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Quality, confidential: theses, manuscripts, reports — letter quality printers. GNW system, Inc. Word processing service. Altitude 3, Alexis Nihon Plaza, 932-0034.

Theses, reports, resumes, etc. 16 years experience in both languages. Rapid service. \$1.50/double spaced. IBM (2-minute walk from McGill). Mrs. Paulette Vigneault, 288-9638.

TYPING SERVICES — fast, accurate typing done on IBM selectric III located at the corner of University and Milton. Call 844-7749 or 488-0696.

WHY NOT have a bilingual expert type your theses, term papers, resumes, essays, bibliographies, etc. Also legal experience. Fluently bilingual. Fast and accurate. IBM typewriters. 487-4627.

### 356 — SERVICES OFFERED

Don't have a way with words? M.A. lecturer offers proofreading, editing of term papers, reports, theses. Reasonable. French, Spanish spoken. 849-8954 evs.

FRENCH: Translation, proofreading, editing. Also typing in French, English, Spanish with an electronic typewriter. Near Beaudry metro station. Please call 521-3414, preferably in the morning.

GIVE A DAMN! Curious about volunteer work? Looking for future job experience? Community McGill can give advice. Contact us in Union 408. 392-8937.

ELAINE A. ZIMBEL, bilingual BIOENERGETIC/PSYCHODRAMA therapist. The body/mind Connection, individuals, couples, groups. For more information, phone 866-0279.

McGill Nightline 392-8234  
McGill Nightline 392-8234  
McGill Nightline 392-8234

### 361 — ARTICLES FOR SALE

Guitar amp. for sale. Yamaha G30-112 (30 watts.) Excellent cond. Asking \$175.00. Call 271-5994.

2 medium blue evening dresses \$100.00 each. Sizes 6-7 and 12-13. 1 mans eskimo jacket size 38, \$60.00. Call after 5:30 482-1190

HOW TO WRITE SONGS (book). Send \$3. to: S.D. & Assoc., Dept. MD, 10087 Boul. St. Laurent, Montreal, Que H3L 2N5.

"10,000 Different Original Movie Posters. Catalogue \$2.00. Mnemonics Ltd., Dept. "H", N° 9, 3600 21 St. N.E., Calgary, AB. T2E 6V6.

WIDEST SELECTION of army fashion in Montreal — male & female EXXA Military Surplus 1477 Mansfield (near Simpson), 1210 St. Denis (near Ste. Catherine)

### 365 — WANTED TO BUY

WANTED: McGill Leather Jacket — men's size 42 or 44 Tall. Please call Mike, 286-0503.

### 370 — RIDES

One-Way airplane ticket to Edmonton, near Jasper, for end of April to mid-May. 735-1840.

### 372 — LOST & FOUND

Lost — long blue coat at Phi Delta Frat party March 9. Keys in pocket much needed. Any info. Please phone 288-3107 ext 2611 (9am — 5pm) 844-5242 (5pm —)

Found: last week in Currie Gym — man's watch. Phone 845-7534 to claim.

# Calorimeter

Those analytical chemists are at it again

George Zarkadas, award winning Science Edition graphic artist and biochemist extraordinaire, was involved in a strange incident in the introductory analytical chemistry lab recently. George was preparing to do a titration, and had his burette properly set up with his flask positioned under the burette. He suddenly remembered that he had forgotten to add buffer to his flask. George went back to the storeroom, picked up his buffer solution, and returned to his bench to see the results of a very unusual reaction. A goldfish was now swimming in George's flask. Now in the sweat and tension of analytical chemistry, George can be forgiven for ignoring the prevention of cruelty to animal comments coming from students across from his bench. George had only one thing on his mind. In the true spirit of the analytical chemist, he picked up his goldfish containing flask, showed it to his demonstrator and asked if he had reached the endpoint yet.

Unpathed waters, undreamed shores

Perhaps the greatest asset of engineers is their eternal optimism. Two McGill engineers were recently overheard talking in the BMH cafeteria about a solution they had come up with to prevent nuclear war. The two young entrepreneurs were planning to develop a special nuclear war activation system computer program. The program would allow countries to plan complicated and strategic attacks on other countries, and the two engineers were planning to market this system to other countries. (One student sitting nearby, probably an artsy, asked about the feasibility of marketing the system.) The engineers' program, would have one interesting side light. In the event of an actual nuclear war, the engineers would have built in a hidden collapsible system which only they could activate. Thus, if a missile launch was attempted during a war, the computer, in response to any command or question, would merely chortle and say either, "Ask your mother" or "God only knows."

An interesting idea, however the engineers decided to abandon it because they found it too difficult to carry the computer parts up the hill to residence.

We're so hot, we turn on the sun

Some science students at the University of Calgary decided to try out a solar sun tanner they had built out of metal reflectors. The five students were sitting comfortably in their bathing suits amid the solar system in the -25°C Calgary weather beside one of the main campus roads, and gathering a great deal of attention from passing motorists. After about half-an-hour, the sun-tanners noticed that most of the motorists were now laughing hysterically as they drove by the solar array. The sun-tanners later learned that about 400 metres away from the sun-tanners, someone had hung a sign reading, "low-cost university housing, air conditioned, 400 metres, next right".

Compatible computers

Friendly talking computers are now being used at Beth Israel Hospital in Boston to take medical histories from patients. The system is saving physicians from asking the same questions 20 to 30 times a day. The computer greets people by saying, "Hello, it's so nice to meet you. Let's have a chat, shall we?" and calls patients by their first name if given permission. Adult patients are responding favourably to the computer but younger patients are often disappointed when they find out that the computer doesn't play video games.

Sayed Jovkar, Heather Peniuk

FOUND: Ski gloves, calculator — Texas Instruments, mitts, gloves, scarves, camera, jacket (La Coste), and black coat. Retrieve at Students' Society main desk, 1st floor, Union Building.

Will the person who removed my black ski gloves from the Union Caf. on Fri 3/16 PLEASE return them. REWARD, No Questions: 932-7535.

### 374 — PERSONAL

Feeling blue in the black of the night? Call McGill Nightline 392-8234. A confidential listening and referral service by students, for students.

ATTENTION WESTMOUNT High old boys — Annual meeting Fri. March 23rd — all years — Mntreal Amateur Athletic Association, 2070 Peel, 5:30 PM — Info 849-0357.

Calling all Students! Need a break, we're here to help swing through the generations. Friday, March 23 at 9:00 PM, Union Ballroom. Come dance the years away McGill Interfraternity Council.

### 385 — NOTICES

Attention: Women Rugby Players: Ste. Anne's R.F.C. is starting another successful season. All interested in playing and/or learning rugby contact Karen 695-9388, Ann 457-5757.

IMPROVE YOUR MARKS this term by learning how to study more effectively. Improve your ability to concentrate in only six short weeks, through hypnosis. Improve your memory. For information, call Dr. Nathan Schiff at 935-7755 or drop in to 1538 Sherbrooke Street West, Suite 710 and ask us about the special student rates.

New York Easter Weekend, three or four days including Greyhound Bus, first class Penta Hotel, representative, discount coupons, taxes and service charges. Limited space 342-5466.

### 387 — VOLUNTEERS

Person needed once a week to visit an elderly widow with heart trouble. Call Community McGill, 392-8937, Union 408.



# Combating Cancer

## McGill Cancer Center at work

by Ann Loewen

Few students, especially undergraduates, have contact with the 7th floor of the McIntyre Medical Building. If there is any contact at all, it is limited to being an elevator stop on the way up to a lecture or a lab. And yet, this floor houses an important and very active group of researchers: together they form the McGill Cancer Center.

The Center was founded in 1978. Dr. Phil Gold, an active researcher in the area of cancer biology, was the Center's first director. He set out to bring together other scientists working on the question of cancer, all of them leaders in their respective fields.

One of those researchers asked to work at the Center was Dr. Roger Hand. He was working in McGill's microbiology department at the time. In 1980, when Gold resigned as director of the Center, Hand was asked to replace him. He accepted and still holds the position.



"I thought they only tested drugs on guinea pigs."

The Center's goal is to further the understanding and treatment of cancer through basic and clinical research. An additional aim of the Center is to provide up-to-date education for students in the rapidly changing field of cancer biology.

There are eight principal investigators at the Center who pursue relatively independent lines of research and have under them technicians, graduate and postdoctoral students.

However, the directions taken by the various groups are not so disparate as to exclude interaction. The two areas of research that are emphasized are studies of cell membranes and the regulation of growth in cancerous cells.

Cells that are malignant have a number of characteristics that are very different from normal cells. It is hoped that by more fully understanding and characterizing these differences, control of the disease will be that much easier to achieve.

Cancerous cells may produce specific antigens, or proteins, on their surfaces, and the structure and function of these "tumor markers" are being studied in

various tissues. As well, the enzymes responsible for adding carbohydrates — that is, sugar units such as glucose — to cell surface proteins are being thoroughly studied at the Center because these membrane proteins also exhibit marked changes when the cell is malignant.

Investigations into the regulation of cancer cell growth is also an important field of study for some Center scientists, because one of the most obvious characteristics of a cancer cell is that it divides at a faster rate than does a normal cell. As well, the replication of DNA, the genetic material of the cell, is being studied by workers in the center. Many anti-cancer drugs act at the level of inhibiting DNA synthesis, a crucial step in cell division, in order to prevent the proliferation and spread of malignant cells.

Hand emphasizes that the work being done at the Center is a slow gathering of facts and drawing of conclusions that will gradually reveal the mystery of cancer. He points out that "research isn't a matter of a breakthrough occurring suddenly over a two-month period where everything opens up, especially in a field as complex as cancer; we chip away instead."

The ultimate aim of the basic research, he says, is to "define the proper biology of the tumor, and then try and correlate it to the clinical state of the patient."

The clinical research of the Center is carried out in cancer units of hospitals such as the Montreal General, the Jewish General, the Royal Vic and the Montreal Children's Hospital. The approach of these researchers, who deal directly with the patients being treated for cancer, is the clinical trials program.

Many cancers have come to be successfully treated through investigations of this kind. In the studies, suitable patients give their consent to participate in the study of a new drug. They are then placed either in a control group, where they receive only the current standard treatment for their type of cancer, or in a test group, where they receive both the standard treatment plus the new drug being studied.

When enough patients have been treated for the required period, the results are analyzed to see if the new drug had any appreciable effect. Using this approach over the period from 1956 to 1971, for example, a treatment was gradually developed so that a significant proportion of childhood leukemias can now be cured.

The Center is presently involved in clinical trials studying treatments of leukemia, breast cancer and lung cancer.

The last area of research covered by the Center is the epidemiology of cancer. Epidemiology is the study of patterns of disease, especially in large populations. Dr. Walter Spitzer is the coordinator of most epidemiological studies done by the Center.

His group is currently studying such questions as what is the best way to screen patients for possible tumors, and whether or not proper screening services are being provided for rural patients in Québec and New Brunswick.

As well, the group may be called upon to investigate reports of what are thought to be abnormally high incidences of cancer. The cases are studied and compared with other populations, and it is decided whether



"Take some interferon, and call me in the morning."

or not the cancer risk within the group is, in fact, higher than normal.

The pursuit of these various approaches to cancer research requires a good deal of money, much of which comes from government sources. In particular, the Medical Research Council of Canada is one government agency which provides money to all the groups at the Center. In addition, some groups receive grants from the National Institute of Health in the United States. In addition, the National Cancer Institute of Canada provides the Center with money from the Terry Fox fund.

According to Hand, the Center's members have been successful in their requests for money, and that "if we do good research, we can get good funding." However, he points out that the awarding of research grants is by no means automatic, because "academic research is always competitive, highly

competitive, and this group happens to do very well."

The members of the Center have their research as their main focus of work, but their appointments carry with them teaching responsibilities as well. Courses are given by Center members to undergraduate medical students, residents and graduate students.

Graduate students at the Center learn the latest techniques in cancer research. The goal of the graduate program is to train individuals to become "world class researchers in academic biomedical research," according to Hand.

This last goal may be among the most significant contributions the Cancer Center makes to the field of cancer research, for it is the people they are training today who will go on to perhaps provide the answers and treatments for cancer.

## McGill Underground

Do you think enough to

by Selwyn De Souza

No, the University does not have its own metro station. But more significantly, it has a very strong research unit in mining and metallurgical engineering that is on the forefront of world mineral technology.

The Queen or rather King Bee of McGill's department of mining and metallurgical engineering is Dr. John Gruzleski. His program of graduate studies covers research activities ranging from the development of geophysical exploration techniques to the metal physics of commercial alloy systems. In this largest department of metallurgy in Canada, 60 research student worker bees manage to cover research topics that meet Canada's needs head on. In a period of inflation and economic hardship, McGill's mining researchers manage to find ways of maximizing the potential of the resources of a growing nation.

In their busy beehive, McGill's metallurgists have been focusing their interests on rock mechanics. This realm deals with the stability of rock openings. There is an analysis of stresses in rocks and how they will behave. There is also emphasis on the stability of the slopes when in the process of digging a quarry or an open pit mine. This element of research is important as it deals with safety control in mining operations. Since occupational hazards are important, the ability to prevent rock bursts and collapses of mine formations in the field of rock mechanics is a major feat.

In an effort to collect the nectar from a variety of sources and apply the fruits of the labour to Canada's previously troubled mining industry, emphasis has been placed on mineral economics. In

order to optimize mine development in Canada, programmes at McGill have been developed to avoid waste of money used in the mining industry.

Other researchers have evaluated the role of fine particles in the mineral industry. As ore bodies become leaner, there develops an increasing need to grind the materials to a fine level. This process deals with the separation of materials from worthless particles. As world leaders in this field, these metallurgical researchers have studied mine environment and the behaviour of fine particles in mineral processing.

Computers are becoming an integral component of metallurgical research at McGill. The application of microprocessors to mining has provided increased efficiency in dealing with the structure of cast materials. In a project of developing an economic evaluation program for new investment, computer software has been designed to perform standard economic assessment of a new mine investment proposal.

Another research exploration includes the study of vacuum metallurgy — a relatively unique field. This uses the idea of a vacuum for liquid metal to get rid of impurities. The emphasis is on recycling and the final obtaining of a pure substance. This is part of a way to reduce pollution in terms of scrap caused by primary metallurgical operations. Ralph Harris are currently studying the vacuum refining of liquid metal.

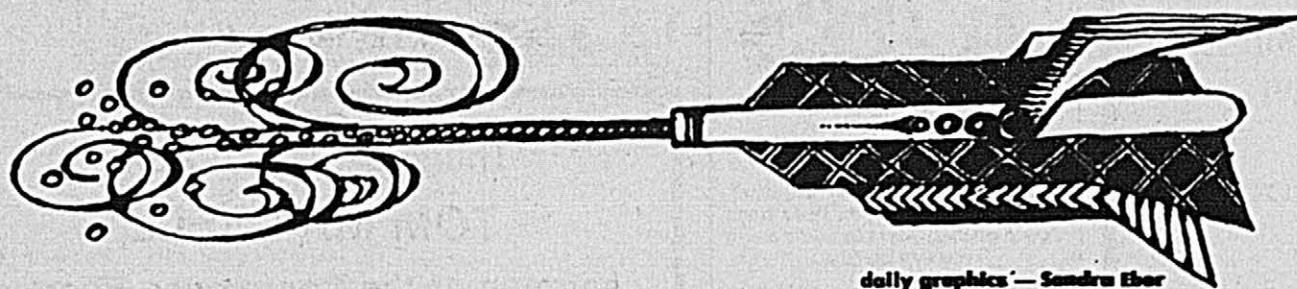
This process has been found to be feasible in overcoming problems such as tramp copper and tin contamination of scrap steel and bismuth contamination of copper. This process, developed at McGill, has the inherent feature of continuously exposing very high surface



"The scientific name for what you have escapes me... I just refer to it as 'the crud.'"



# Physics decelerates cyclotron, aims laser



by Tania Luhde

McGill's cyclotron is enveloped by two feet thick concrete blocks and covered by at least ten feet of earth. It is the core of the Foster Radiation Laboratory, just across from the Ernest Rutherford Physics Building.

The building boasts its own electronics and machine shops, in addition to several large computers and research labs. It is home to a small circle of professors and thirteen graduate students. This centre of activity is supervised by Director Jonathan Lee.

A cyclotron is a circular accelerator which generates particle energies of millions of electron volts. It generates charged particles from a central source. An alternating electric field accelerates them spirally in a plane which is at right angles to a fixed magnetic field.

McGill's cyclotron, a so-called synchro-cyclotron, was built right after WWII, entirely by McGill staff using donations mainly from companies such as Alcan and Dominion Steel. The magnet was constructed, and then the roof was covered. It was the first accelerator in a Canadian university.

The first experiment was performed in 1949, and the cyclotron has been used continuously for research ever since. The cyclotron has produced over 100 M.Sc. and Ph.D. graduates in physics, and a smaller number in nuclear chemistry.

The first major upgrading occurred during the early 1960's. Normally, the proton beam runs inside the cyclotron, but an external beam was extracted, enabling the researchers to bring the protons to a target. Also at this time another wing was added to the building.

The second stage of development occurred in the 1970's, when the cyclotron's capabilities were expanded to enable it to accelerate deuterons, Helium-3, and alpha particles. New research equipment was added, such as an on-line isotope separator. Especially new and unique was the Super Conduction Solenoid Beta Spectrometer, according to Lee.

Many radioactive isotopes were discovered at McGill using the cyclotron. "One of the highlights of our machine is the identification of delayed

proton decay...a new form of radioactivity," Lee elaborated. In the past decade, the work has focussed on the systematic study of nuclear structure, and charged particle induced fission work.

enables the researcher to change the frequency of the light in order to probe the unstable nucleus.

In the future, the FRL may use lasers to detect single atoms. Electromagnetic traps might be built and the presence of a single ion in them could be verified through lasers.

The cyclotron is expensive to maintain, and without being used for research can not be supported at its present level. This raises the spectre of the cyclotron being turned off entirely. Hopefully this will not occur. Radiochemists use it for their research, and some hospitals, especially the Montreal Neurological Institute, rely on the isotopes it produces. Leo Yaffe of the



"It looks like Fred has gone solar."

Despite all these activities, it became evident that the cyclotron had become outdated. Lee explains, "Two years ago, we decided that the cyclotron is not going to be the major area of research of the nuclear physics group, so we started to make preparations to move to another domain...to use laser technology to study nuclear properties...Our research program will be less dependent on the cyclotron."

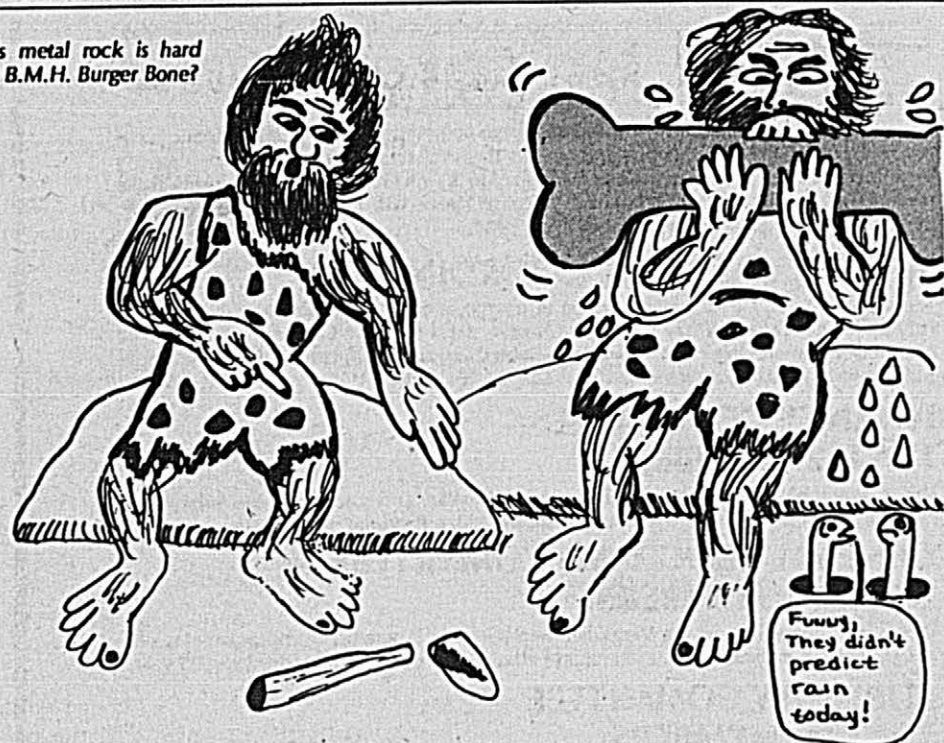
Lasers will be used as a probe to study unstable isotopes. "(This) use of a laser is a lot more sensitive than other people are using them elsewhere...We have to push for and develop better and better sensitivity and...resolution (in lasers)," Lee explains.

Lasers themselves are not new, but the techniques to use them in this way is just being developed. The main tool which will be used is the recently commercially available Tuneable CW Dye-Laser. It provides an intense, stable, single frequency light; the Dye-Laser

Chemistry Department is using the cyclotron to determine the composition of ancient coins at different times in history without destroying them in the process. But perhaps the most important use of the cyclotron is the "hands-on" education of students.

In earlier years, both the machine and research were "very much supported by McGill," but now the National Science and Engineering Research Council provides most of the FRL's funding for technical staff, research associates, grad student stipends and capital and equipment. The present underfunding makes it more difficult for the FRL to maintain the present research programs and simultaneously develop a new field.

"Despite all these difficulties, however," Lee concludes, "the prospects for research are really great at FRL, and in the not too distant future, we will be able to do very exciting research in this new field."



A JUNE CONSPIRACY BY PENEUK/PEARSON/PARING PRODUCTIONS

areas of clean liquid metal to vacuum. At present, the current work focuses on scrap aluminum and copper purification.

In general, McGill's beehive of metallurgical research has been able to align itself closely to Canadian industry. At a time when capital is needed to develop new technology, McGill manages to maximize its efforts by keeping in close contact with industrial groups. Thus, the research becomes more meaningful in many respects.

Mining and metallurgical engineering which employs more than 129,000 people in Canada has been a major contributor to Canada's position as one of the wealthiest countries in the world. Gruzleski and his staff have managed to attract students' interests in mining and metallurgy and give them a wide educa-

tion in the industry.

A misconception that metallurgical research takes place only at the North Pole is likely to diminish with an increased awareness in the field. The summer employment of 95% of undergraduate U1 students is an indication that metallurgy is an important science.

When confronted with the notion that this research work has helped to make Canadian mining the recognized leader in progressive employee education around the world, there is no doubt that McGill's worker bees are an invaluable asset. No longer should students accidentally mistake meteorology for metallurgy. The honeycomb still has new compartments to be explored where the royal jelly of research awaits hungry minds.



"I guess I was attracted to particle physics for the usual reasons. I like to work at home, and I have a very small apartment."



**Thursday, March 22**  
**Department of English**  
**Students' Association**

**General Meeting at noon**

**Leacock 232**

**McGill Chinese Students' Society**  
**General Election**

Wednesday, March 21st, 7:00 pm  
Union B09

President: Albert Cheng  
V.P (Internal): Gwendolyn Yip  
V.P (External): Cythia Chen  
Norman Yee  
Publicity: Fabian Leung  
Social Director: Daniel Lam

Members please bring membership card for voting.  
All are welcome

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**Advanced Production Workshop** — here-ish (like the Daily Office) at three-ish...  
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**Thursday, March 22nd**

**TOM MAXWELL**

*chairman of the Conference Board of Canada*

will speak on

## Alternatives and Scenarios to the Canadian Economy

The lecture will include a slide show and question period. The time of the presentation will be 3 p.m. in Leacock 26.

**Presented by the Economic Students' Association**

## McGILL PROGRAM BOARD APPLICATIONS

are hereby called for the following positions:

(Deadline: 4:30 p.m., Wednesday, March 21, 1984)

### SECRETARY

The Secretary of the Program Board will act as liquor officer, booking co-ordinator and general secretary to the Board. He or she shall be responsible for making sure rooms are booked for events, liquor licences and forms have been obtained for all events as well as taking minutes at Program Board meetings.

### TREASURER

The Treasurer will be responsible for overseeing all aspects of the finances of the Program Board including budget preparation, control of expenditures, ticket sales, payment of entertainers, etc. The treasurer will Chair the Finance Committee.

### GENERAL PROGRAMS VICE-CHAIRMAN

The student holding this position will oversee all events and activities (with the exception of guest speakers) which take place outside of the Welcome Week or Winter Carnival time periods. Events could include such things as dance and theatrical performances, concerts, dances, comedy acts, films, etc. and be planned by the General Programs Committee.

### PUBLICITY VICE-CHAIRMAN

The Vice-Chairman, Publicity will chair a committee of students which will ensure that all events and activities organized by the Program Board are properly publicized and promoted on campus and from time to time within the Montreal community. Design of posters, newspaper ads and on occasion, production of radio advertisements will be involved as well as the issuing of press releases.

### SPEAKERS VICE-CHAIRMAN

The student in this position will familiarize him or herself with guest speakers currently on the university lecture circuit and present a speakers program for the 1984/85 year (including Welcome Week and Winter Carnival periods) to the Board for approval. The V-C Speakers will oversee the implementation of the approved speakers program with the assistance of the Speakers Committee.

### VOLUNTEERS VICE-CHAIRMAN

Each year the Program Board enlists the assistance of a large number of student volunteers who work at the many events. In recognition of the importance of these people who help out at events, this position has been created solely to co-ordinate the volunteers and to improve communications between them and the individual event organizers.

### ACTIVITIES NIGHT COORDINATOR

The student holding this position will be in charge of organizing Activities Night, the annual "meet the clubs" night in the Union Building which will be held on Thursday, September 20, 1984.

### WELCOME WEEK COORDINATOR

The Welcome Week Coordinator will chair a large committee of event coordinators. He or she will ensure that all activities planned for the Welcome Week period are properly organized and encourage maximum participation by McGill students, especially those students at McGill for the first time. Welcome Week will take place from Tuesday, September 4th to Saturday, September 15th, 1984.

### WINTER CARNIVAL COORDINATOR

The student holding this position will be in charge of organizing the six festival days in February 1985 called Winter Carnival. Creative ideas for new Carnival events will be encouraged. As with Welcome Week, the Winter Carnival Coordinator will oversee a large committee of event co-ordinators.

### FINANCE COMMITTEE — TWO (2) MEMBERS

This Committee, chaired by the Treasurer, will plan and carry out the procedures necessary to ensure all events are run smoothly from a financial point of view.

### GENERAL PROGRAMS COMMITTEE — FOUR (4) MEMBERS

This Committee will assist the Vice-Chairman (General Programs) in the organizing of a wide variety of entertainment, cultural and educational events during the 1984/85 year.

### PUBLICITY COMMITTEE — TWO (2) MEMBERS

The Vice-Chairman (Publicity) will chair this Committee which must ensure that the major task of promoting all events sponsored by the Program Board will be carried out on time and effectively.

### SPEAKERS COMMITTEE — FOUR (4) MEMBERS

The Students' Society Speakers Program which is coordinated by the Vice-Chairman (Speakers) of the Program Board requires the input of a wide variety of interests across campus to ensure diversity in the guest speakers selected. Members of this Committee will also be responsible for assisting in the carrying out of individual events.

### NOTE:

Notwithstanding the specific nature of some of the above positions, all students holding positions on the Board are expected to attend meetings throughout the year and assist in areas other than their own. (This does not necessarily apply to members of the above committees.)

All of the above positions are considered voluntary. Joint applications will be entertained from not more than two (2) persons for any one position. Applications for committee positions will only be accepted from individual applications.

All applications will be treated confidentially and will be reviewed by a committee consisting of the incoming Chairman of the Program Board, the Vice-President (Internal Affairs), the Program Director of the Students' Society and the Liaison Officer to the Dean of Students. The best qualified candidates will likely be interviewed by this committee.



"General Application" forms are available from the Students' Society General Office, Room 105 of the University Centre, 3480 McTavish Street; Sadie's II in the McConnell Engineering Building and the LSA and SAO offices in Chancellor Day Hall. Completed applications must be submitted to Leslie Copeland, Operations Secretary, Students' Society General Office, NO LATER THAN 4:30 P.M., WEDNESDAY, MARCH 21ST, 1984.

**Lisette Noodelman**  
Chairman  
Students' Society  
Nominating Committee



**Important meeting for students to organize to fight tuition hikes — Thursday at 14h in Gertrudes II. It affects us all. Make them listen to what we have to say about it.**

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Upcoming events of the McGill Arab Students' Ass'n

## I GENERAL ASSEMBLY

Date: Wed. March 28, 1984

Time: 7:30 pm

Place: Leacock 232

All members and other Arab students are urged to attend.

## II LEBANON DAY

Date: Wed April 4, 1984

Time: 11:00 - 24:00

Place: Union Bldg. 107-108

Look for further details in the Daily next week.

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## Japanese Student Scholarships

Peat, Marwick (Canada) announces a scholarship program to enhance opportunities for Japanese students to study in Canada.

The scholarships are open to any Japanese citizen who is admitted to a course of full time study in Business or Economics at a Canadian university, at either the undergraduate or graduate level.

### Scholarship Provisions

Cash amounts may be awarded annually to an individual or individuals, to an aggregate total of \$2,500.

The scholarships are tenable for one full academic year.

Individuals may re-apply in subsequent years, whether or not they have previously been awarded a scholarship.

### Selection

A selection committee to be named by Peat, Marwick (Canada) will review applications and decide the number of scholarships to be awarded in any year and their amount.

The Consul General of Japan, in Toronto, will act as advisor to the committee.

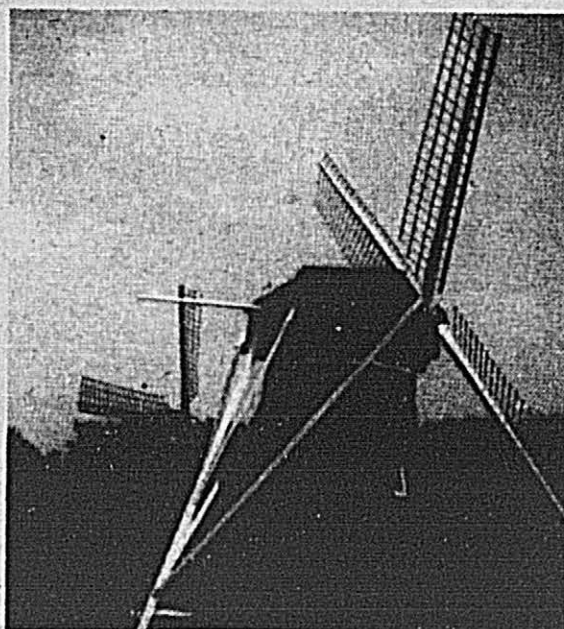
### Applications

Requests for application forms should be addressed to:  
Mr. R. Michael Howard, B.A., C.A., Peat Marwick,  
P.O. Box 31, Commerce Court Postal Station, Toronto,  
Ontario M5L 1B2.

Completed applications will be received until April 15 of each year, applicable to the subsequent academic year at the Canadian university which the applicant will attend.

**PEAT  
MARWICK**

## Youth Fares to Amsterdam



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01 May-31 May — \$598	12 Aug.-30 Sept — \$698
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